

an illumination apparatus comprising a flexible liquid light guide coupled to the cell holder for highlighting the plurality of sites in a relatively even spatial manner for image capturing purposes, wherein the flexible liquid light guide comprises a flexible member suitably arranged to contain the liquid and capable of vibrationally isolating the image capturing device from the illumination apparatus;

an image processing device coupled to the image capturing device, the image capturing device being adapted to convert the image into a digital representation; and

a database storage device comprising a database management element coupled to the image capturing device, the database storage device being adapted to retrieve the digital representation of the image from the image processing device and storing the digital representation.

11. A database system comprising:

a plate comprising a plurality of sites in a spatial orientation, each of the sites being capable of holding a plurality of cells to be imaged;

a light source comprising a flexible liquid light guide coupled to the plate for illuminating the plurality of cells in a relatively uniform spatial manner for image capture purposes;

an image capturing device to capture a plurality of images of at least one of the sites, the image capturing device coupled to the plate, wherein the flexible liquid light guide comprises a flexible member suitably arranged to contain the liquid and capable of vibrationally isolating the image capturing device from the light source;

an image processing device to combine a first image and a second image from the plurality of images, the image processing device coupled to the image capturing device, the image processing device being adapted to form a plurality of respective features of the plurality of images; and

a database storage device comprising a database management element coupled to the image processing device, the database storage device being adapted to retrieve the plurality of features and store the plurality of features.

16. A system for capturing cellular information from a population of cells, the system comprising:

an image acquisition system comprising a charged coupled camera adapted to capture an image of a plurality of manipulated cells, the illumination apparatus providing for an acquisition of the image of the plurality of manipulated cells;

an illumination apparatus comprising a flexible liquid light guide coupled to the image acquisition system for highlighting the plurality of manipulated cells, wherein the flexible liquid light guide comprises a flexible member suitably arranged to contain the liquid and capable of vibrationally isolating the illumination apparatus from the image acquisition system; and

a database system coupled to the image acquisition system, the database system being adapted to be populated with information of the image of the plurality of manipulated cells;

wherein the information comprises a plurality of descriptors, each of the descriptors comprising a plurality of features, each of the features corresponding to a cellular or subcellular component from the plurality of manipulated cells.

29. A system for capturing images of cells or cell structures from multiple cell holders, each comprising a plurality of sites in a spatial orientation, each of the sites being capable of holding a plurality of cells to be imaged, the system comprising:

an image capturing device coupled to the cell holder, the image capturing device being adapted to capture at least one image in at least one of the plurality of sites;

an illumination apparatus comprising a flexible liquid light guide coupled to the cell holder for highlighting the plurality of cells in a relatively even spatial manner for image capturing purposes, wherein the flexible liquid light guide comprises a flexible member suitably arranged to contain the liquid and capable of vibrationally isolating the image capturing device from the illumination apparatus;

a robot arm for automatically collecting multiple of said cell holders to facilitate capture of the images of the cells or cell structures from said multiple cell holders; and

software that analyzes the images and characterizing features of the cells or cell structures in the images.